Tailored Approaches to Improve Early Infant Diagnosis Coverage and Outcomes in Tanzania

USAID Boresha Afya North/Central Zone

Despite global progress in the reduction of new pediatric HIV infections, the substantial risk of infection during the antenatal and postnatal periods remains. ART coverage, particularly in infants and young children is low, largely stemming from poor identification through inadequate coverage and utilization of early infant diagnosis (EID) services among other approaches to identify HIV infected infants and children. Challenges in follow-up of HIV exposed infants (HEI) during the postpartum period, until final diagnosis, also persist. Timely uptake of virological testing among HIV exposed infants (HEI) allows for early and appropriate linkage to care and initiation of treatment, reducing HIV related morbidity and mortality.

HIV Exposed Infant Context in Tanzania

Although EID of HIV infection is a routine element of maternal and child health care in Tanzania, improved management of HEI continues to be a priority. Tanzania's major goal for the elimination of mother to child transmission of HIV was to reduce new HIV infection at end of exposure, among HIV exposed infants from 7.6 % in 2016 to below 2.0% in 2021.[1] However, HIV exposed infant (HEI) enrollment into care after birth declined from 70.4% in 2015 to 62.2% in 2019 in Tanzania.[2] Over the same period, HIV testing in the form of dried blood spot (DBS) testing among exposed infants significantly dropped from 79.0% in 2015 to 58.1% in 2019.[3] The proportion of enrolled HEI that received ARV prophylaxis has remained over 95.0% over the past couple years. The 2019 national program data reveals that 85.1% of HIV positive infants are retained on treatment after one year and 71.0% after two years.[3]

These data highlight gaps along the EID cascade, which pose risks of increasing maternal to child transmission (MTCT) among HIV exposed infants. National estimates in 2019 show an overall transmission of 9.4% at the end of breastfeeding among women in the post-partum period. Transmission of HIV was the highest among women in PMTCT who dropped out of care or missed appointments.[4]

1 URT, *Tanzania Elimination of Mother to Child Transmission of HIV Strategic Plan Ii 2018 – 2021*, 2017.

2 URT, *TANZANIA NATIONAL PMTCT REPORT, 2019,* 2020.

3 URT, *TANZANIA NATIONAL PMTCT REPORT*, 2019.

4 URT, *TANZANIA NATIONAL PMTCT REPORT*, 2019.

USAID Boresha Afya North/Central Zone Response

The project is a United States Agency for International Development-funded project implemented from 2016-2021 in six regions and 459 facilities in Tanzania, focusing on improving access to and quality of comprehensive services, including maternal and child health.

The United States Agency for International Development (USAID) Boresha Afya North/Central Zone project in Tanzania implemented tailored strategies aimed at supporting mother and infant pairs focused on retention and addressing identified gaps in the HEI cascade.

Using quality improvement methodologies, an adapted package of PMTCT services was developed, focusing on:

- Increasing the coverage and uptake of ARVs and viral load testing among HIV-positive pregnant women and breastfeeding mothers and their infants attending post-natal care (PNC)
- Increasing the proportion of mother-infant pairs retained in PNC
- Increasing the proportion of HIV-exposed infants under two years of age with a confirmed HIV status through DNA/PCR or antibody testing
- Increasing uptake of the nutrition assessment, counseling, and support (NACS) package through provision of NACS tools and trainings for health care workers on NACS and system strengthening

Varied strategies were implemented to support improvement in coverage and outcomes for mothers and infants. These strategies were complementary to the adapted package and were multi-faceted in focusing not only on the programmatic implementation but also on the monitoring, data, and human resources elements. The following figure illustrates the diverse response.

Main Strategies implemented to improve EID Services and Outcomes

Addressing Service Coverage

- Provision of daily EID services
- Sample and result transportation support
- Promotion of maternal re-testing across all sites
- RCH1 card screening by medical attendants at under 5 clinics

Data Reviews

- Site level and labor and delivery data review of HIV-positive women for registration and testing of HEI
- Experience sharing and peer support via continuum of care meetings to improve EID services
- Standardized review of mother-child information to ensure confirmatory testing occured at 18 months

Quality Improvements

- Implementation of altered package to encourage mother-baby pair follow-up
- Use of stickers with specific dates to support easy identifcation of confirmatory testing needed at 18 months for infants
- Monthly quality improvement meetings

Data Capture

- Utilization of local HEI registers for HEI data capture to ensure documentation at referral facilities
- Consistent evaluation of facility registers to check documentation for mothers and infants

Task Shifting

- Utilization of medical attendants and lay counsellors in reproductive child health clinics
- Use of these cadres to support screening of RCH1 cards for children at 18 months to confirm final outcomes
- Use of these cadres to support mothers in having their HEI tested; after an HEI is identified, the caregiver and child are escorted to a trained provider for testing

Retention Activities

- Mother support groups
- Psychosocial support and counselling
- Close monitoring of mother-baby pairs to identify those lost to follow-up (LTFU) and to follow-up and bring them back to the facility

Impacts of USAID Boresha Afya North/Central Zone Implemented Strategies on EID

With the continued employment of these strategies, EID coverage and outcomes improved from 2017 to 2021:

- ✓ The overall EID coverage improved from **81%** in 2017 to **90%** in 2021
- ✓ EID coverage specifically within 2 months of birth improved from **64%** to **77%**
- ✓ The percentage of HEI with a documented final outcome increased from **61%** to **88%**
- ✓ The positivity among infants with a documented outcome by 18 months dropped from **6.1%** to **2.8%**
- ✓ **100%** of infants identified HIV-positive were initiated on ART

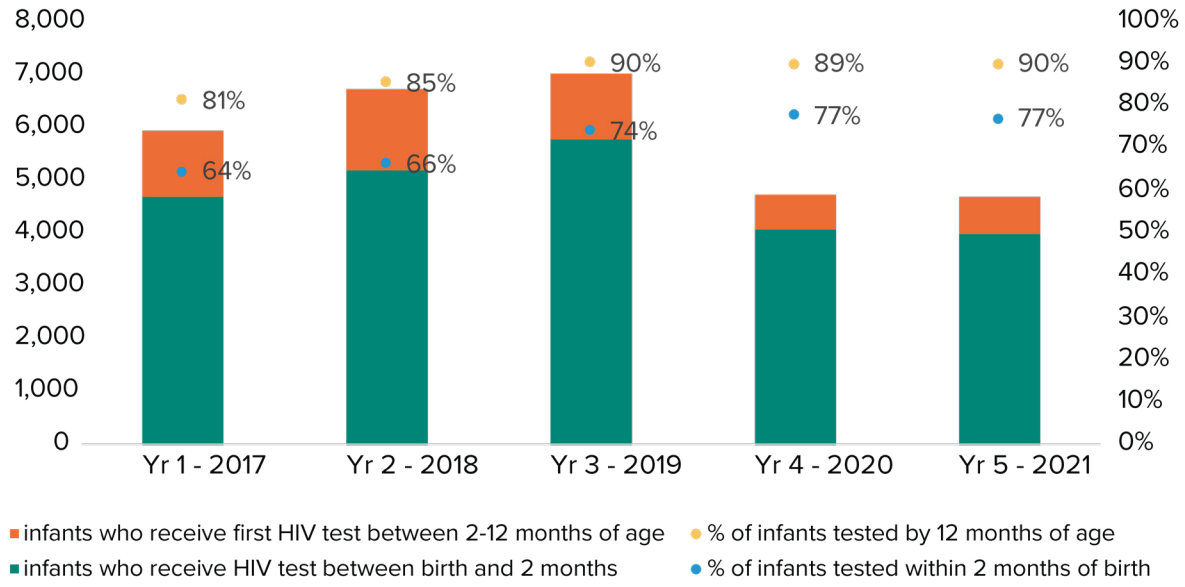

Figure 1*. EID uptake over time of infants with EID ≤ 2 months and ≤ 12 months

*Yrs1-3(2017-2019) covered six regions; Yrs4-5 (2020-2021) covered five regions, with Tabora excluded

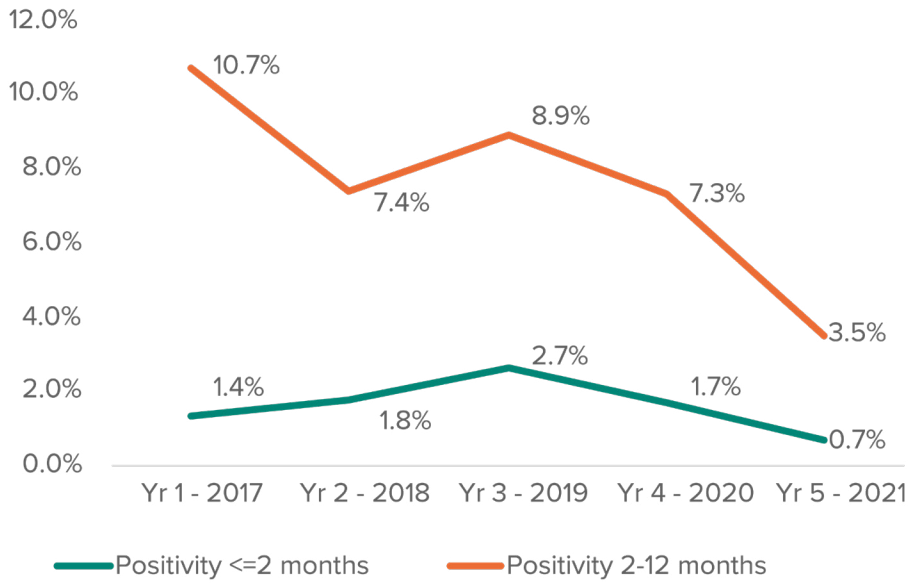

Figure 2. Trends of positivity among HEI at ≤ 2 months and between 2-12 months

*Yrs1-3(2017-2019) covered six regions; Yrs4-5 (2020-2021) covered five regions, with Tabora excluded

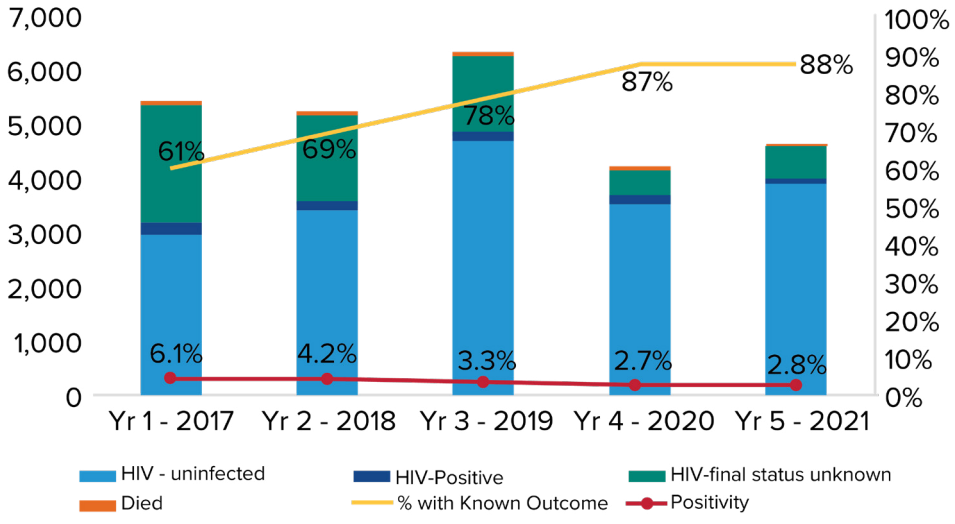

Figure 3. Final outcomes among HEI over time

*Yrs1-3(2017-2019) covered six regions; Yrs4-5 (2020-2021) covered five regions, with Tabora excluded

Lessons Learned

Through implementation of the multi-faceted response, several valuable lessons were learned:

- ➔ Utilization of mother-baby cohort registers allowing for longitudinal cohort monitoring streamlined follow-up of mother-baby pairs for improved retention in care and subsequent provision of EID services including final outcome.
- ➔ Introduction of new tools such as the cohort monitoring register required investment in training for providers in their use.
- ➔ Ensuring the provision of health education for pregnant women on how to live with HIV and how to prevent their infants from acquiring HIV is essential to improving retention of mother baby pairs until final outcome:
    - In many areas, women have not had the opportunity to complete their education and are illiterate, highlighting the need for verbally-based health education on PMTCT.
    - The education should highlight the importance of knowing their HIV status, early ART initiation, viral load suppression, EID, and ARV prophylaxis for the prevention of HIV to infants.
    - This focused health education coupled with marking of the child's RCH-1 card helps the mother to know when to seek EID services in the event they are not referred by a service provider.
- ➔ Leveraging experience sharing platforms such as continuum of care meetings provides providers the opportunity to share and discuss successes and challenges based on their experiences to offer insights into how similar challenges have been addressed previously or in other settings.
    - Most of the challenges within councils stem from demographic and socioeconomic issues. Tailored solutions are needed to address identified challenges; however, prioritizing promotion of ownership of the interventions is critical for sustained implementation and buy-in.
- ➔ Investing in improved data capture through registers and review methods enhanced awareness of real time trends and strengthened implementation of EID services and referrals.
- ➔ The deployment of lay cadres improved the identification of HIV exposed infants. Community health workers were recruited and trained on documentation of HIV exposure in RCH 1 cards, and ensured the capture of HEI attending the under 5 clinics, freeing up time on this administrative work among clinical staff.
    - In rural areas, a shortage of skilled human resource for health (HRH) resulted in the employed HRH to be overworked. Task sharing to lay cadres helped address the lack of skilled workers and improve the identification and testing of HEI.

The Reproductive Child Health (RCH) 1 Card

The RCH 1 card is given to children five years and under and is used to record the child's health information. The card records the exposure status of the child, their weight, height, vaccinations etc. At every visit to the under 5 clinic, the child's information is updated.

Conclusions

The array of approaches employed in the USAID Boresha Afya North/Central Zone project were successful in improving follow-up and outcomes of HEI. The continued prioritization of EID and quality infant care service implementation is needed to ensure gains are sustained and progress continues, including through initiatives such as point of care EID. Understanding the context in which services are provided is critical to ensure tailored interventions address the identified gaps in EID.

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